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(54) **METHOD AND APPARATUS FOR STOCK AND INDEX OPTION PRICE IMPROVEMENT, PARTICIPATION, AND INTERNALIZATION**

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(57) **ABSTRACT**

A method for stock option trading includes receiving an option order at a market, contemporaneously receiving a copy of the option order at an electronic drop (EDrop) system, which is separate and distinct from the market, obtaining a potential cross quantity and a potential cross price based on the option order at the EDrop system, and submitting, through the EDrop system, a contra-order, with respect to the option order, to the market for fulfillment, wherein the contra-order specifies at least one of an underlying security potential cross quantity, and the potential cross price.

21 Claims, 3 Drawing Sheets
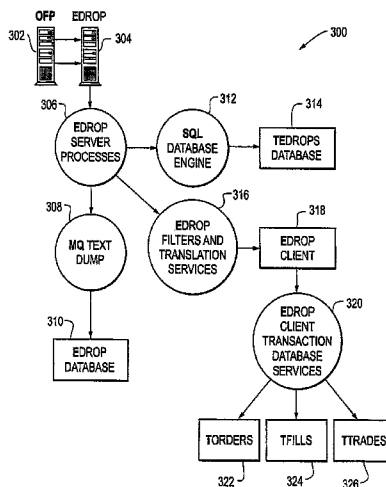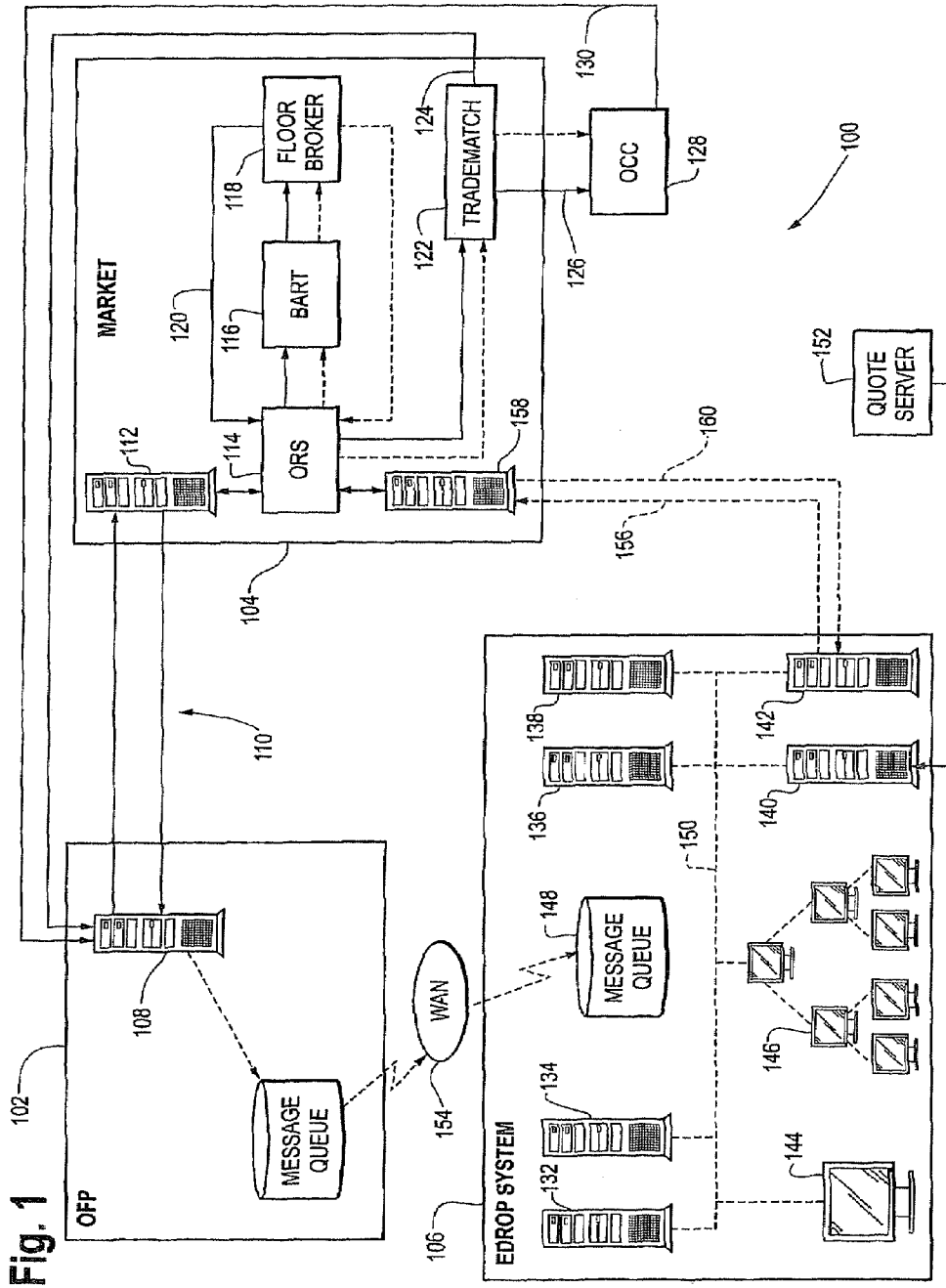
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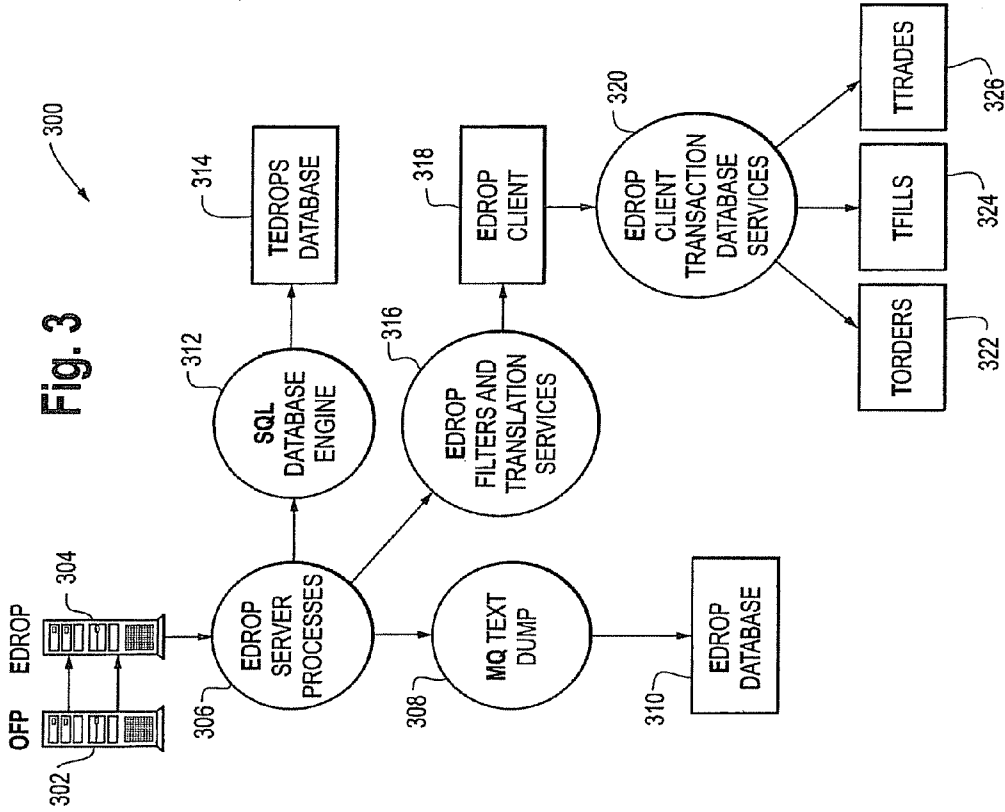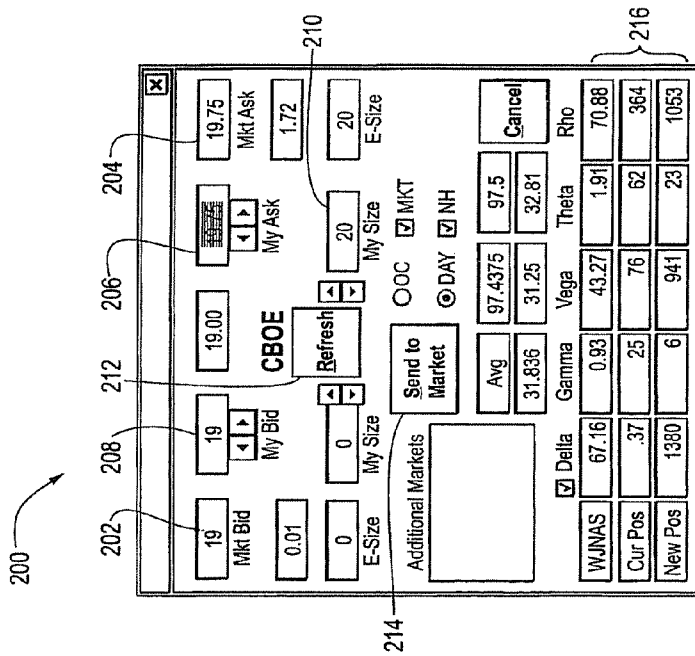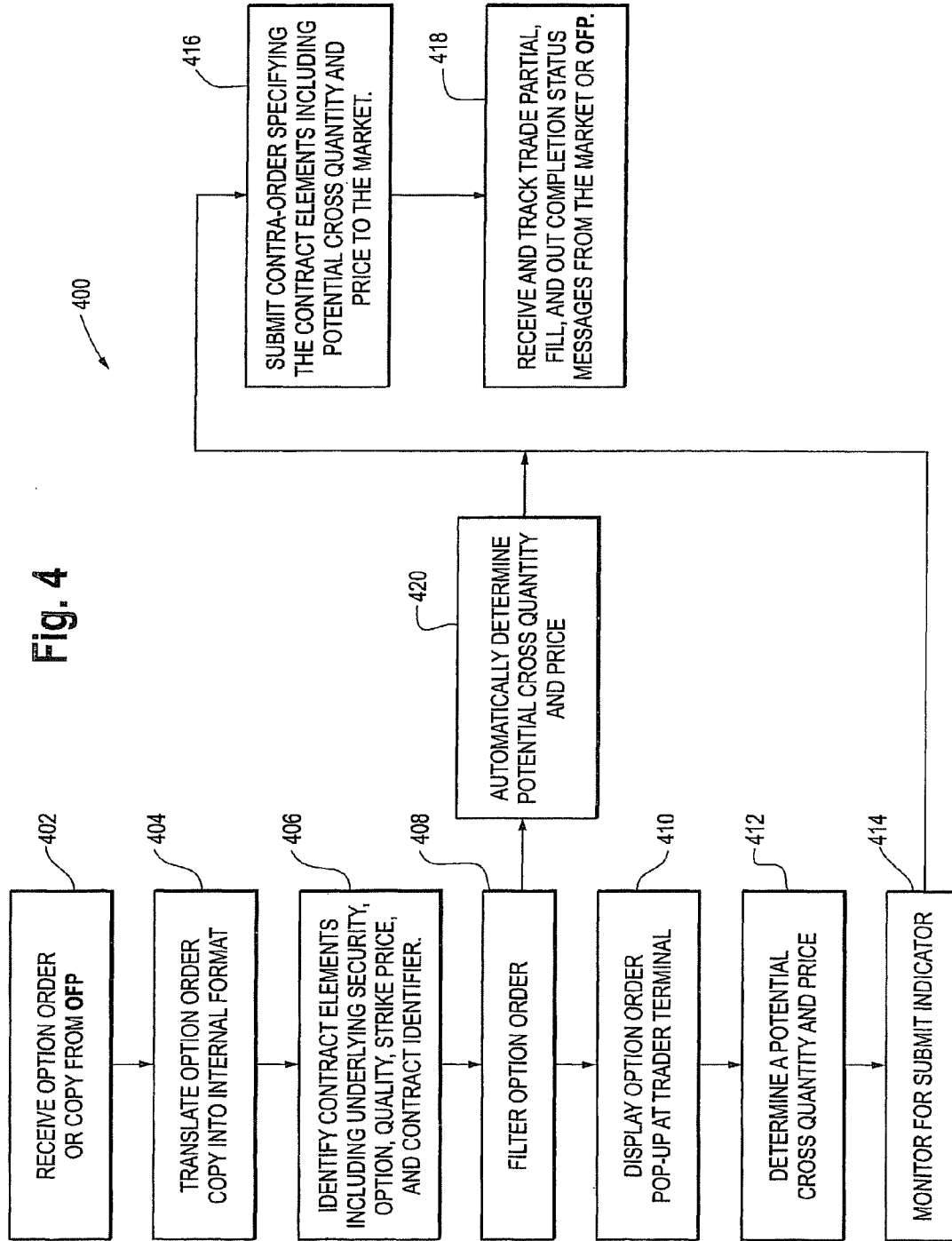
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Fig. 1

Fig. 3

300

EDROP
OFP

302
304

306
EDROP
SERVER
PROCESSES

308
MQ TEXT
DUMP

310
EDROP
DATABASE

312
SQL
DATABASE
ENGINE

314
TEDROPS
DATABASE

316
EDROP
FILTERS AND
TRANSLATION
SERVICES

318
EDROP
CLIENT

320
EDROP
CLIENT
TRANSACTION
DATABASE
SERVICES

322
TORDERS

324
TFILLS

326
TTRADES

Fig. 2

200

202
Mkt Bid
19
0.01
0
E-Size

208
My Bid
19

212
My Size
0

206
CBOE
Refresh
Send to
Market

214
Additional Markets

204
My Ask

19.00

210
My Size
20

19.75
Mkt Ask
1.72
20
E-Size

OOC   ☑ MKT
⊙ DAY ☑ NH

216

	Delta	Gamma	Vega	Theta	Rho
WJNAS	67.16	0.93	43.27	1.91	70.88
Cur Pos	.37	25	76	62	364
New Pos	1380	6	941	23	1053

☑ Delta   Avg   97.4375   97.5
31.836   31.25   32.81
Cancel

Fig. 4

400

402 — RECEIVE OPTION ORDER OR COPY FROM **OFP**

404 — TRANSLATE OPTION ORDER COPY INTO INTERNAL FORMAT

406 — IDENTIFY CONTRACT ELEMENTS INCLUDING UNDERLYING SECURITY, OPTION, QUALITY, STRIKE PRICE, AND CONTRACT IDENTIFIER.

408 — FILTER OPTION ORDER

410 — DISPLAY OPTION ORDER POP-UP AT TRADER TERMINAL

412 — DETERMINE A POTENTIAL CROSS QUANTITY AND PRICE

414 — MONITOR FOR SUBMIT INDICATOR

420 — AUTOMATICALLY DETERMINE POTENTIAL CROSS QUANTITY AND PRICE

416 — SUBMIT CONTRA-ORDER SPECIFYING THE CONTRACT ELEMENTS INCLUDING POTENTIAL CROSS QUANTITY AND PRICE TO THE MARKET.

418 — RECEIVE AND TRACK TRADE PARTIAL, FILL, AND OUT COMPLETION STATUS MESSAGES FROM THE MARKET OR **OFP**.

METHOD AND APPARATUS FOR STOCK AND INDEX OPTION PRICE IMPROVEMENT, PARTICIPATION, AND INTERNALIZATION

This application is a continuation of pending application Ser. No. 10/786,196, entitled "Method and Apparatus for Stock and Index Option Price Improvement, Participation, And Internalization," filed Feb. 25, 2004, now U.S. Pat. No. 7,392,218, which is in turn a continuation of application Ser. No. 09/621,769, entitled "Method and Apparatus for Stock and Index Option Price Improvement, Participation and Internalization," filed on Jul. 21, 2000, now U.S. Pat. No. 6,829, 589, both of which are hereby expressly incorporated by reference in their entireties, including the specification, claims, drawings, and abstract.

BACKGROUND OF THE INVENTION

The present invention relates to securities trading. In particular, the present invention relates to a method for trading stock options that provides an intermediary with copies of option orders destined for a market.

An option (either stock or index) provides a contractual agreement that allows the holder to buy or sell a security or its underlying cash equivalent at a designated price for a specified period of time, unaffected by movements in the security market price during that period. Put and call options, purchased both for speculative and hedging reasons, are typically made in anticipation of changes in underlying prices. A put option provides the holder an option to sell, or put, shares to the other option party at a fixed put price even though the market price for the security declines. On the other hand, a call, provides the holder an option to buy, or call for, shares at a fixed call price notwithstanding a rise in the market price for the security.

In the past, order flow providers (OFPs) generated option orders to buy or sell put and call options. In particular, the OFP accepted a customer order (e.g., a buy put order), encoded the order, and transmitted the order directly to a market. The market (e.g., the Chicago Board of Options Exchange or CBOE), received the order and presented it to traders that determined whether to fill the order in part, in full, or not at all (i.e., an out) in a process often referred to as matching. The result of the matching process is then communicated back to the OFP that subsequently alerts the customer.

The order flow processing described above, however, only provides an effective mechanism for the market itself to trade options. In other words, past order flow processing was a closed system. As a result, other individuals and organizations that could also meaningfully participate in option trading and possibly improve the customer price were excluded from the opportunity to do so.

A need has long existed in the industry for a method for trading options that addresses the problems noted above and others previously experienced.

BRIEF SUMMARY OF THE INVENTION

A preferred embodiment of the present invention provides a method for stock and index option trading. The method includes the steps of receiving an option order, a copy of an option order, or option order information sufficient to ascertain the type of order and an associated contract (collectively referred to below as an "option order copy"), from an order flow provider. The option order is contemporaneously submitted to a market. The option order copy identifies, as

examples, puts, calls, contract elements including a contract identifier, an underlying security, strike price, expiry, and option quantity. The method then determines a potential cross quantity and potential cross price based on the option order and submits to a market a contra-order (with respect to the originally received option order) specifying the contract (including the underlying security and expiry), as well as a potential cross quantity, and a potential cross price.

The option orders may be any of buy calls, sell calls, buy puts, and sell puts, as examples. Thus, when the option order is a buy call, the contra-order will be a sell call, when the option order is a sell call, the contra-order will be a buy call. Similarly, when the option order is a buy put, the contra-order will be a sell put, when the option order is a sell put, the contra-order will be a buy put.

The method may also, for example, translate the option order from any number of order flow provider formats into a common internal trading system format. Similarly, the contra-order may be formatted for any predetermined destination market, including the CBOE, PCOAST, AMEX, PHLX, or ISE.

In certain embodiments, the method may automatically determine the potential cross quantity and potential cross price and submit the contra-order without human intervention. In other embodiments, the method may popup a display that shows the contract elements, option bid price or option ask price, market bid and ask prices for the underlying security, risk management information, and the like, at a trader terminal, and monitor the trader terminal for a submit indicator (e.g., a click on a Submit button). In addition, the method may filter option orders before automatically submitting the contra-order, or before presenting option order related information on the trader terminal.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 illustrates an option trading network.
FIG. 2 shows an exemplary option pop-up window.
FIG. 3 illustrates a data flow diagram for an EDrop server.
FIG. 4 shows a method for option trading.

DETAILED DESCRIPTION OF THE INVENTION

Turning now to FIG. 1, that figure presents a high level diagram of an options trading network 100. In FIG. 1, solid arrows represent conventional order flow processing, while dotted arrows show extended order flow processing as described in more detail below. The network 100 includes an order flow provider (OFP) 102, a market 104, and an electronic drop (EDrop) system 106. At the OFP 102, a mainframe 108 generates option orders that are transmitted over a network 110 to a server 112 at the market. The particular market structure discussed below is that of the Chicago Board of Options Exchange (CBOE), but it is noted that the present trading method may cooperate with any option market.

The server 112 provides the option orders to an order routing system 114 that forwards option orders to the BART 116. The BART (Booth Automated Routing Terminal) 116 is an exchange provided system that allows the OFP's staff to intercept an order for routing purposes. Orders routed through BART are eligible for packet restructuring. This allows for firm responsible for the BART terminal to specify which information is passed onto the PARS Terminal. The PARS terminal is the destination of all BART orders and is held by a broker in the trading pit. Once an order is routed to PARS from BART the order will then be executed. A BART terminal

can handle limitless numbers of PARS stations giving the firm
the ability to route its orders very definitively. One or more
floor brokers **118** decide whether to fill, partially fill, or take
no action on an option order. Resultant order acknowledge-
ments are communicated back to the order routing system
114 over the link **120**. The order acknowledgements pass
through the trade-match module **122** where initial clearing
functions begin. A report of unmatched trades (i.e., outs) are
communicated back to the OFP **102** via the link **124**, while
matched (i.e., partial or complete fills) are communicated
over link **126** to the OCC **128**. The OCC (Options Clearing
Corporation) **128** processes the pre-matched trades for final
clearing and settlement, and communicates a report of
matched trades back to the OFP **102** through the link **130**.
Each of the links **124-130** may represent a single connection
through a network, or physically separate connections.

With the addition of the EDrop system **106**, access to the
market **104** is expanded. The EDrop system **106** includes, for
example, an application server **132** (that stores executable
applications), an e-mail server **134** (responsible for sending
and receiving e-mail), and a message queue (MQ) server **136**.
The e-mail server **134** is not a required part of the EDrop
process. In addition, the EDrop system **106** also includes a
risk management server **138** (that executes risk management
software), a quote server **140** (that receives real time quotes
from an external source), and a gateway **142** (that communi-
cates with the market **104**).

Also illustrated as part of the EDrop system **106** is a trader
terminal **144**, a risk management system **146**, and a option
order message queue **148**. An internal network, illustrated as
an Ethernet network **150**, connects the servers **132-142**, trader
terminal **144**, and risk management system **146**. The external
real time quote server **152** provides real time security quotes
and other statistics to the quote server **140**.

The EDrop system **106** is connected to the OFP **102**
through the WAN **154** (although the EDrop system **106**, OFP
102, and market **104** may all be connected on a single net-
work). As the OFP **102** generates an option order for the
market **104**, the OFP **102** contemporaneously generates a
copy of the option order and transmits the copy to the EDrop
system **106**. The EDrop system **106** thereby receives the
option order at the same time, or within milliseconds after the
market **104**.

The option order copies are queued in the order message
queue **148**. The queue server **136** monitors the queue for new
option orders, retrieves the option orders, and presents the
option orders on the trader terminal **144**. To this end, the
queue server **136** (or software running on the trader terminal
144) may identify in the option order option contract ele-
ments including underlying security, option quantity, expiry,
strike price, and a contract identifier (e.g., an alphanumeric
string).

As will be explained in more detail below, the trader oper-
ating the trader terminal **144** may then determine a potential
cross quantity and a potential cross price based on the option
order. Subsequently, the EDrop system **106** submits a contra-
order, with respect to the option order, specifying contract
elements including the contract identifier, underlying secu-
rity, strike price, and expiry, as well as the potential cross
quantity and the potential cross price, to the market **104** for
fulfillment.

Turning briefly to FIG. **2**, that figure illustrates an embodi-
ment of a pop-up **200** displayed on the trader terminal **144**.
The pop-up **200** presents, for the option order, the current
market bid **202** and ask **204** at the market **104** (as well as
additional markets). The pop-up **200** also provides trader ask
206, trader bid **208**, and trader quantity entries **210**, a refresh

button **212** (for updating the current bid and ask prices), a
submit button **214**, and a Cancel button. Pressing the submit
button provides a submit indicator to the EDrop system **106**
that the trader desires to send a contra-order to the market **104**.
The EDrop system **106** prepares the contra-order, using the
trader bid or ask price, and the trader quantity as specified in
the pop-up **200**.

Additionally shown in the pop-up **200** are risk manage-
ment entries **216** Delta, Gamma, Vega, Theta, and Rho for
WJNAS (the contract symbol for this example), the trader
current position, and the trader new position. The risk man-
agement entries represent trading parameters, boundaries or
references and provide trading guidelines to the trader. The
pop-up includes other information as well, including indica-
tors for An Immediate or Cancel (i.e., an order is filled imme-
diately at said price and quantity at the moment upon presen-
tation or cancelled), Day (i.e., Day Orders are good at said
quantity and price for the entirety of the trading day in which
it was entered into the market), MKT (i.e., a Market Order to
be traded at the quantity specified and the current price avail-
able at the market), NH (Price Not Held, i.e., an order at the
specified quantity but not held to the specified price, E-size
(the quantity of the order received from the OFP **102**), Aver-
age values for implied volatilities, are captured in FIG. **2** for
WJNAS at a moment in time at the values 31.836, 31.25,
32.81, 97.4375, and 97.5.

Returning to FIG. **1**, the EDrop system **106** uses the link
156 through the gateway **142** to the EDrop order server **158** in
the market **104** to communicate contra-orders, while the link
160 may be used to communicate resultant execution mes-
sages back to the EDrop system **106**. The results of contra-
order processing at the market **104** are also passed through the
trademand module **122** and OCC module **128** for reporting to
the OFP **102**.

It is also noted that the potential cross quantity, potential
cross price, and the decision to submit a contra-order may be
automated. In other words, in certain embodiments, the
EDrop system **106** makes contra-order decisions automati-
cally for every option order, or a subset of option orders based
on, for example, risk management criteria. The remaining
option orders may then be presented on the trader terminal
144.

Take for example, an IBM option order specifying a pur-
chase of 50 calls of IBM. The OFP **102** submits the IBM
option order to the market **104**, but also contemporaneously
submits an option order to the EDrop server **106**. As the IBM
option order makes its way to, and enters the market **104**, the
EDrop system **106** presents the IBM option order (and addi-
tional information as noted above with respect to FIG. **2**) on
the trader terminal **144**. A trader may then determine whether
to meet the order in whole or in part (or not at all).

For example, the trader may attempt to meet 15 of the 50
calls. The EDrop system **106**, in response, submits a contra-
order, with respect to the original order, to the market **104**. In
other words, the EDrop system **106** sends an option order to
sell 15 calls of IBM. At the market **104**, the contra-order and
the original order may cross, resulting in 15 of the 50 purchase
calls of IBM filled by the EDrop system **106** through the
supporting infrastructure of the market **104**.

Although FIG. **1** illustrates a single OFP **102**, market **104**,
and EDrop system **106**, there may be multiple OFPs, markets,
and EDrop systems interconnected. Preferably, an EDrop
system converts option orders (and other messages) sent from
each OFP into an internal standard format for processing.
Outgoing messages (including contra-orders) are translated
into a format compatible with their destination (e.g., the mar-
ket **104**).

Turning next to FIG. **3**, that figure presents a data flow diagram representative of the processing that occurs in the EDrop system **106**. The OFP **302** sends option order copies (and possibly additional messages) to the EDrop system **304**. The EDrop server **304** preferably converts the OFP **302** option order copy format into an internal trading system format. The same internal trading system format is preferably used for each OFP that may be connected to the EDrop server **304**. For example, the OFP **302** may send an option order copy reciting the feedcode MSQVA. The feedcode is then interpreted according to the standard specified by the OCC (Options Clearing Corporation) as an October **105** put for Microsoft (MSFT). The quantity may be obtained from a subsequent line in the option order copy.

The fields provided in the internal trading system format are illustrated below in Table 1. The field values may be stored in individual variables, or collected into one or more data structures.

TABLE 1

A. Message Header	B. Trade Destination	C. Transaction Number	D. Trade Status
E. Date of Trade	F. Time of Trade	G. Confirmation time of Order	H. Execution Firm
I. Execution Broker	J. Flags	K. Symbol	L. Exchange Code
M. Expiration Date	N. Strike Price	O. Price	P. Quantity
Q. Open Quantity	R. Minimum Quantity	S. Timed Order	T. Good until code
U. Good until	V. Stop limit price	W. Stopped price	X. With discretion fraction
Y. Commission rate	Z. Account	AA. Sub account	BB. Clearing firm
CC. Routing code	DD. Specialist	EE. Booth ID	FF. User Data
GG. User comment	HH. Reserved space		

The format of an option order varies from OFP to OFP. For example, the OFP **102** may use the fields shown below in Table 2.

TABLE 2

1. Buy/Sell	2. Call/Put	3. Quantity	4. Symbol
5. Month	6. Strike	7. Price Type	8. Execution Type
9. Firm Order Type	10. Price	11. Routing ID	12. Accounting ID
13. Sequence Number	14. Exchange	15. Filler	

An exemplary conversion of the fields shown in Table 2 to the fields of the internal trading system format shown in Table 1 is:
Field to Field
1 to J
1 to J
3 to P
4 to K
5 to M
6 to N
7 to J or S-X (depending on Price Type)
8 to J
9 to J
10 to V
14 to B and/or CC
All other inbound fields may be ignored and stored in a database. Note that the internal trading system format

includes many fields that are not necessarily specified in a given OFP option order format. The fields are provided, however, so that the fields in more complex option orders received from other OFPs may be maintained and manipulated in the EDrop system **106**.

The EDrop server **304** performs a first filtering operation **306** of the messages. The first filtering operation **306** allows for an immediate cut in the number of orders viewed by client processes. The filters include:
Size (the size of the order being traded),
Order Type (Type of execution or pricing style to be applied to the order at the floor.),
Route (forwarded to client services based on Route specified, i.e., the exchange to which the order is to be traded).

Additional filters include: Underlying Symbol, Industry Sector, Beta values and OFP disseminated criteria. An example implementation of a filter check on size is: If then contract specifies an order size less that the Auto-Ex (exchange automatically executed) size then filter the order (i.e., do not present the order to the client process described below).

Examples of execution types include Combination or Spread orders, GTC (Good till canceled), Day (Day orders), IOC (Immediate or cancel), or AON (All or none). Examples of pricing styles include Market (Market price), Limit (Limit to customer price), and NH (Not held to specified price).

All messages received pass through the text dump process **308** and are stored in the unfiltered database **310**. Messages that pass through the first filter process **306** are stored, using an SQL database process **312** into a filtered database **314**. Thus, the filtered database **314** preferably maintains messages that are eligible orders, in the sense the orders have passed an initial level of review and may result in a contra-order as explained below.

Continuing with respect to FIG. **3**, the messages that pass the first filter process **306** continue through a second filter process **316**. As examples, the second filter process **316** may provide client level filtering to reduce the number of orders viewed by the end-user by removing orders that meet a certain set of user-definable criteria.

The criteria may include, as examples:
Marketability (i.e., how valued is the order compared to the pricing available at the market),
Delta Risk (i.e., the directional risk in the order),
Position Risk (i.e., the manner in which the order being viewed will affect the current position at a strike level, month level, and global position management level).

As an example, a filter check for marketability may be implemented by determining the current NBBO (National Best Bid/Offer) and sending only orders that are near or inside these parameters.

Additional filter criteria include: Theta, Vega, and Gamma filters, as well as Volatility Filters, and Corporate Action filters. A customizable set of Price versus Edge filters are available for advanced filtering, in addition to Profit and Loss and Unit filters that refresh based on current position changes. To that end, an API to which additional filters can be added is optionally provided. The API provides function calls to change the filters when the market conditions or position strategies merit those changes.

Messages (typically option orders) that pass through the second filter process **316** are presented to the EDrop Client **318**. The EDrop client **318** presents the option order copy information (and additional information shown in FIG. **2**, for example), on a trader terminal. Alternatively, the EDrop client **318** may make an automated decision of potential cross quan-

tity and potential cross price, and automatically submit a contra-order to the market **104**.

Contra-orders that are sent to the market **104** are preferably stored in an Order Table **322** in a database. After acknowledgement of a partial or full fill, the EDrop client **318** may then store the associated fill information in the Fill Table **324** in the database. A further Trade Table is also provided for stocks, bonds, and other security trades that do not arise from option order placement and acknowledgement.

With reference next to FIG. **4**, that figure shows a flow diagram **400** of a method for option trading implemented in software in the EDrop system **106**. The EDrop system receives **402** an option order copy from an OFP, and translating **404** the option order copy into an internal trading system format.

Next, the EDrop system **106** identifies **406** contract elements in the option order copy. The contract elements may include, for example, a contract identifier, underlying security, strike price, option quantity, and expiry. As noted above, the EDrop system **106** may then filter **408** the option order copy and display **410** decision-making information on a trader terminal. The decision making information includes, for example, the contract elements identified above, as well as underlying security bid and ask prices (possible at many different markets), option bid or ask price, risk management variables, and the like.

The trader then determines **412** a potential cross quantity and price, while the EDrop system **106** monitors **414** for a submit indicator (e.g., the click of the Submit button **214**). Subsequently, the EDrop system **106** obtains the potential cross quantity and price from the trader terminal, and submits **416** a contra-order, with respect to the original option order, to the market. The contra-order includes, for example, the contract elements including a contract identifier, underlying security, strike price, expiry date, potential cross quantity, and potential cross price. Next, the EDrop system **418** receives order fulfillment messages from the market **104** or OFP **102**. The fulfillment messages may include, for example, full fills, partial fills, or outs, and are typically stored in a database at the EDrop system **106** for tracking and reporting purposes.

As noted above, the EDrop system **106** may instead automatically determine **420** a potential cross quantity and potential cross price. To that end, the EDrop system may examine risk management criteria, such as those set forth above. As an example, if the presented order information from the OFP points to an increase in volatility exposure for the trading position, a reduced amount of the order may be acted upon. The EDrop system **106** may then automatically determine a potential cross quantity of a reduced size and a potential cross price of that equal to the NBBO (i.e., the National Best Bid Offer).

While the invention has been described with reference to a preferred embodiment, it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular step, structure, or material to the teachings of the invention without departing from its scope. Therefore, it is intended that the invention not be limited to the particular embodiment disclosed, but that the invention will include all embodiments falling within the scope of the appended claims.

The invention claimed is:

1. A method for stock option trading comprising:
   receiving an option order at a market;
   contemporaneously receiving a copy of the option order at an electronic drop (EDrop) system; and

automatically generating a contra-order based on the copy of the option order received at the EDrop system, wherein the contra-order specifies at least one of an underlying security potential cross quantity, and the potential cross price.

2. The method of claim **1**, wherein receiving comprises receiving an option order selected from the group of option orders consisting of buy calls, sell calls, buy puts, and sell puts.

3. The method of claim **2**, wherein submitting comprises submitting a sell call when the option order is a buy call option order, and submitting a buy call when the option order is a sell call option order.

4. The method of claim **3**, wherein submitting comprises submitting a sell put when the option order is a buy put option order, and submitting a buy put when the option order is a sell put option order.

5. The method of claim **1**, wherein receiving comprises receiving the option order from an order flow provider that contemporaneously submits the copy of the option order to the EDrop system.

6. The method of claim **1**, further comprising the step of translating the option order from an order flow provider format into an internal trading system format, and wherein submitting comprises submitting the contra-order in a market format.

7. The method of claim **6**, wherein receiving further comprises receiving an additional option order from an additional order flow provider, and further comprising translating the additional option order from an additional order flow provider format into the internal trading system format.

8. The method of claim **1**, further comprising displaying at least an underlying security, am option quantity, at least one of an option bid price and option ask price, and an ask price at a trader terminal, and monitoring the trader terminal for a submit indicator.

9. The method of claim **8**, wherein displaying further comprises displaying underlying security bid and ask prices at the market.

10. The method of claim **9**, wherein displaying further comprises displaying risk management variables.

11. The method of claim **1**, further comprising the step of applying a filter to the option order before determining the potential cross quantity.

12. The method of claim **11**, further comprising storing the option order in a filtered database when the option order passes the filter.

13. The method of claim **1**, further comprising storing the option order in an unfiltered database.

14. A method of trading in a securities trading network having a market, the method comprising:
   receiving information regarding an order sent to a market at a server;
   automatically obtaining a contra-order based on the order at the server; and
   submitting the contra-order to the market for fulfillment.

15. The method of claim **14**, wherein the server is separate and distinct from the market.

16. The method of claim **14**, wherein the order is one of a stock and index option order.

17. The method of claim **14**, wherein receiving comprises receiving an order selected from a group of option orders consisting of buy calls, sell calls, buy puts, and sell puts.

18. The method of claim **17**, wherein submitting comprises submitting a sell call when the order is a buy call order, and submitting a buy call when the order is a sell call order.

19. The method of claim **17**, wherein submitting comprises submitting a sell put when the order is a buy put order, and submitting a buy put when the order is a sell put order.

20. A trading network system, comprising:

an electronic order flow provider for generating an order;

a market in communication with the electronic order flow provider through a network, the market configured to receive the order; and

a server in communication with the electronic order flow provider and the market, the server receiving information regarding the order, and wherein the server generates a contra-order based on the order to the market for fulfillment.

21. A method of stock option trading comprising:

receiving an option order at a market;

contemporaneously receiving a copy of the option order at an electronic drop (EDrop) system, which is separate and distinct from the market;

identifying contract elements in the option order including a contract identifier, underlying securing, strike price, and expiry;

obtaining a potential cross quantity and a potential cross price based on the option order at the EDrop system; and

submitting a contra-order, with respect to the option order, to the market.

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